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ACTIVITIES OF THE UNITED NATIONS SYSTEM IN THE FIELD OF WATER AND MINERAL RESOURCES, AND INTER-AGENCY COORDINATION FOCUSING ON PROGRESS MADE TOWARDS ACHIEVING SUSTAINABLE DEVELOPMENT

Activities of the Economic and Social Commission for Western Asia in the area of water resources

Note by the Secretary-General

The Economic and Social Commission for Western Asia (ESCWA) has transmitted the report of the Expert Group Meeting on the Implications of Agenda 21 for Integrated Water Management in the ESCWA Region (available in the language of submission), which is contained in the annex below.

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Annex

REPORT OF THE EXPERT GROUP MEETING ON THE IMPLICATIONS OF AGENDA 21 FOR INTEGRATED WATER MANAGEMENT IN THE ESCWA REGION

(Amman, 2-5 October 1995)

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I. ORGANIZATION OF WORK

1. The Expert Group Meeting (EGM) on the "Implications of Agenda 21 for Integrated Water Management in the ESCWA Region" was held in Amman, Jordan during the period from 2 to 5 October 1995. It was jointly sponsored by the United Nations Economic and Social Commission for Western Asia (ESCWA) and the United Nations Environment Programme (UNEP) as a follow-up activity to implement the recommendations of Chapter 18 and other water-related chapters of Agenda 21 in the ESCWA region.

2. The Meeting was attended by government-designated experts in the fields of water and environment. Representatives of several regional and international organizations were also in attendance (list of participants is shown in appendix 1).

3. The documentation of the Meeting consisted of background documents prepared by the ESCWA secretariat; a document prepared by a consultant on behalf of UNEP; country papers prepared by government-designated experts; and papers prepared by United Nations, regional and international organizations (list of documents is shown in appendix 2).

4. The EGM was convened under the patronage of H.E. the Minister of Water and Irrigation of the Hashemite Kingdom of Jordan. The opening session of the Meeting began with a welcome address by the Chief of the Energy, Natural Resources and Environment Division of ESCWA.

5. In his speech, the representative of UNEP enumerated the programme areas under Chapter 18 of Agenda 21 and stressed the need for evaluating the status of its implementation on a regional basis. He also briefed the audience on the regional workshops jointly sponsored by UNEP, its regional offices and the United Nations regional commissions.

6. In addressing the Meeting, Dr. Hazem El-Beblawi, Under-Secretary-General, Executive Secretary of ESCWA, expressed his gratitude to H.E. the Minister of Water and Irrigation in accepting the ESCWA invitation to take part in the opening session. He also welcomed the participants and expressed his appreciation to UNEP for their cooperation in co-financing and convening the Meeting and their support to the ongoing ESCWA/UNEP joint activity on the use of remote-sensing techniques in the assessment of water resources in the ESCWA region.

7. Referring to the purpose of the Meeting, Dr. El-Beblawi stressed that this gathering was arranged to discuss one of the most important chapters of Agenda 21, at least with regard to the ESCWA region, namely Chapter 18, which deals with the quality and quantity of freshwater supply, and the management of water resources. The importance of this chapter, Dr. El-Beblawi explained, resides in its emphasis on an integrated approach for the development, management and utilization of water resources. He also highlighted the main topics of the documents prepared by the secretariat of ESCWA, which provided background material on relevant chapters of Agenda 21 to the development and management of water resources in the region.

8. H.E. Mr. Salih Irsheidat, the Minister of Water and Irrigation, called for closer regional cooperation in order to make available the necessary requirements for facing water shortages. He emphasized that regional cooperation would assist countries in dealing with water supply limitations to overcome difficulties resulting from tensions over water. Mr. Irsheidat added that, on the national level, there are many activities in the Ministry of Water and Irrigation that need to be implemented such as the formulation of a comprehensive national water strategy and policies, updating the water master plan, and carrying out a conservation and national public awareness campaign.

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9. The participants in the Meeting elected the following officers:

- Chairman, Mr. Bassam Adib Jabir (Lebanon);
- Vice-Chairman, Mr. Mohammed Al-Iryani (Yemen);
- Rapporteur, Miss Nadia Al-Jawhari (Jordan).

10. The Meeting adopted the Agenda and the Work Programme with slight changes regarding the timing of the sessions and the sequence of presentations (as shown in appendices 3 and 4).

II. ACCOUNT OF THE PROCEEDINGS

11. Ten documents including the one prepared by the UNEP consultant were presented by the secretariat of ESCWA as background materials covering various programme areas of Chapter 18 and other water-related chapters under Agenda 21. The first paper addressed the concept of integrated water resources management as outlined in Agenda 21. The paper also contained ideas and specific suggestions for national work programmes and recommendations for the inclusion of the objectives of Agenda 21 in national water plans in the ESCWA region.

The second paper was devoted to methodologies for preparation of water master plans.

In view of the importance of regional cooperation in developing national technical skills, the third paper concentrated on suggestions regarding the establishment of a regional training network in different areas of water management.

Owing to the complexity of water quality issues, three papers were presented on the assessment and control of water quality, the increasing groundwater salinity, and identification of water quality indicators.

In the seventh paper special emphasis was placed on the applications of advanced technologies in the assessment, development and monitoring of water resources. Thus, the paper addressed the application of isotope techniques in applied hydrology and the progress achieved by ESCWA member States in this field, as did the eighth paper, which included comparative studies of selected water basins in the ESCWA region using remote-sensing techniques.

The ninth paper addressed technical and economic aspects of water desalination and reviewed the potential as well as the constraints of water desalination techniques currently in use, compared with other water resources.

The last paper discussed the low-cost waste-water treatment using filtration techniques from groundwater recharge basins and its recovery and reuse for agricultural and industrial purposes.

12. The country papers presented by the government-designated experts focused on the respective national experiences in the implementation of different water-related components of Agenda 21, through their master water plans and/or other water resources development programmes. Most of the country papers described the situation pertaining to the availability of water resources and discussed issues related to water supply and demand.

In general, papers from countries in the northern part of the ESCWA region reflected reliance on surface water, and to a limited extent, on shallow groundwater in Meeting domestic and irrigation requirements, while

the southern part of the region appeared to depend heavily on desalination and shallow and deep groundwater reserves.

The presentation of the country papers revealed that the degree of implementation of programme areas under Chapter 18 of Agenda 21 differs widely from one country to another. Some countries geared their efforts towards water resources assessment, protection of water quality and sustainable urban development through adequate water supply, while water policies of other countries concentrated on improvement of drinking water and sanitation, and sustainable utilization of groundwater.

On the other hand, it appeared that achievements in the implementation of Agenda 21 vary throughout the region due to differences in the availability of financing resources for executing water projects, skilled manpower, utilization of appropriate technologies and institutional capabilities.

13. Papers presented by the representatives of regional and international organizations described their role in promoting the development of the water sector with particular emphasis on the implementation of various programme areas of Agenda 21. Under this item, presentations particularly highlighted such crucial issues as training activities towards upgrading manpower capabilities, mainly in the field of wastewater and environmental health; potential role and contributions of isotope methods in the water sector; technical and financial support for more effective water policies, institutional reforms, and water supply and sanitation improvement; the role of the World Hydrological Cycle Observation System (WHYCOS) in the improvement of collection, dissemination, standardization and use of hydrological information at the national, regional and international levels; and identification of quantified criteria for the use of more efficient methods for balancing water supply and demand, taking into account water contributions to the overall socio-economic developments.

14. In a panel-like discussion, it was recognized that the water situation in the ESCWA region is becoming more and more serious. Views expressed by the participants converged that the ESCWA region consists mostly of arid and semi-arid zones and therefore facing chronic water shortages with marked deficiencies in the management of the available water resources, and is now in urgent need for long-term vision considering future prospects within the framework of overall socio-economic development and closer subregional, regional and international cooperation.

It was also admitted that in many ESCWA countries substantial technical and financial assistance is required for a proper implementation of Agenda 21.

III. CONCLUSIONS AND RECOMMENDATIONS

15. The Expert Group Meeting (EGM) reviewed the efforts made in the ESCWA member countries in implementing the activities identified in Chapter 18 of Agenda 21, and it recognized with appreciation the importance and relevance of the documents prepared by the ESCWA secretariat, the national experts and those presented by the representatives of other United Nations, regional and international agencies.

The EGM acknowledged that, in spite of the progress so far achieved by ESCWA member countries, intensive efforts are still needed for fulfilling the objectives of Agenda 21 for integrated management of water resources.

Particularly noted:

(a) **Continued seriousness of the water situation in the ESCWA member countries;**

(b) **Water scarcity, increasing pollution, and uneven distribution of water;**

(c) **Inappropriate allocation of water among various sectors in many countries;**

(d) **Fragmented institutional and organizational framework with overlapping functions and lack of coordination, in some ESCWA member countries;**

(e) **Inadequate water legislation and/or insufficient enforcement of existing rules and regulations;**

(f) **Need to make a clear distinction between water assessment, planning and resource management functions on the one hand, and the operational development and water use functions on the other;**

(g) **Need for closer cooperation for the development and exploitation of shared water resources among the ESCWA member countries, and on the international level;**

(h) **Inadequate and unreliable databases in several ESCWA member countries;**

(i) **Financial constraints in most of the ESCWA member countries with respect to the support of integrated water management projects;**

(j) **Shortage of qualified personnel in the water sector in some of the ESCWA member countries;**

(k) **Lack of comprehensive water master plans and national water policies in most of the ESCWA member countries;**

(l) **Persistence of many difficulties in the implementation of water conservation programmes in the ESCWA member countries.**

16. **Therefore, the EGM recommends the following:**

16.1 For the consideration of member States:

(a) **The EGM called on the concerned government authorities to gear their efforts towards sustainable socio-economic development through integrated water management, taking into account the interrelationship of water resources and the environmental issues;**

(b) **To activate the preparation and/or updating of national water master plans, emphasizing the integrated approach to water resources development and management. The master plan should include alternative scenarios, taking into account possible climatic change;**

(c) **To conduct systematic and comprehensive water resources assessments, as these will furnish the basic information for any current and future water plans and strategies;**

(d) **To seek all possible approaches to develop shared water resources by means of clear and well-defined water agreements;**

(e) To develop and apply water quality and water supply criteria for public health protection, and the maintenance of ecosystems;

(f) To improve efforts to inform decision makers, and the public at large, about the critical situation in the water sector, resulting from the inefficient water utilization, and deterioration of water quantity and quality;

(g) To promote capacity building programmes in the field of water resources and to strengthen the relevant institutional framework to ensure adequate training of personnel at all levels;

(h) To promote and enhance the exchange of technical and scientific experience among ESCWA member countries and at international levels;

(i) To promote more effective use of modern technology, such as telemetry, remote-sensing, isotope hydrology, GIS, and modelling techniques, in hydrological and hydrogeological assessment, development, and integrated management;

(j) To coordinate the functions of the different entities concerned for ensuring the integration of environmental considerations in the national water strategies in order to achieve overall sustainable socio-economic development;

(k) To improve water demand management including water allocations among different sectors;

(l) To encourage and strengthen water conservation programmes by all available means, including financial incentives, regulatory and technical measures;

(m) To promote and conduct research pertaining to the use of brackish water for agricultural activities; and to encourage the reuse of treated wastewater and agricultural drainage water in accordance with national and international criteria;

(n) To encourage research and development to reduce sea and brackish water desalination costs;

(o) To actively participate in the formulation and adoption of international resolutions on water issues;

(p) To enhance cooperation and coordination in the field of water resources development and management among ESCWA member countries.

16.2 Recommendations to regional and international organizations:

(a) To provide technical assistance to facilitate the formulation of national water policies in the ESCWA member countries in need of such assistance;

(b) To request donors to provide new and additional funds for the implementation of the various programme areas of Chapter 18 of Agenda 21, particularly for water resources development in countries faced with financial constraints;

(c) To contribute to the promotion and the development of the World Hydrological Cycle Observations System (WHYCOS) components within the ESCWA region for the benefit of the

countries, and of the regional and international communities, in cooperation with the regional and international organizations involved in the water sector;

(d) To organize and sponsor ad hoc training courses in line with the main components of each programme area of Chapter 18 of Agenda 21, taking into account existing capabilities in the ESCWA member countries;

(e) To follow-up on the implementation of the various components of the Agenda 21 through the organization of seminars, workshops and Meetings to identify any potential technical constraints that may hamper the progress of activities;

(f) To enhance cooperation and coordination in the field of water resources among regional and international organizations through pooling of resources and undertaking joint activities.

Appendix I

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Appendix II

LIST OF DOCUMENTS

Aide-memoire	E/ESCWA/ENR/1995/WG.1/INF.1
Information notice	E/ESCWA/ENR/1995/WG.1/INF.2
Provisional list of participants	E/ESCWA/ENR/1995/WG.1/INF.3
Provisional agenda	E/ESCWA/ENR/1995/WG.1/L.1/Rev.1
Provisional programme of work	E/ESCWA/ENR/1995/WG.1/L.2
Methodologies for water sector planning	E/ESCWA/ENR/1995/WG.1/3
Assessment of water quality in the ESCWA region	E/ESCWA/ENR/1995/WG.1/4
Groundwater quality control in the ESCWA region	E/ESCWA/ENR/1995/WG.1/5
Development of water quality indices for sustainable development	E/ESCWA/ENR/1995/WG.1/6
Regional cooperation between Mashreq and Maghreb in the field of current technologies in water resources management	E/ESCWA/ENR/1995/WG.1/7
Application of isotope hydrology techniques in the ESCWA region	E/ESCWA/ENR/1995/WG.1/8
Implications of Agenda 21 for integrated water management in the ESCWA region	E/ESCWA/ENR/1995/WG.1/9
تقنية قليلة الكلفة لتنقية المياه العادمة واعادة استعمالها	E/ESCWA/ENR/1995/WG.1/10
Remote-sensing techniques for comparative studies of watersheds in selected basins in the ESCWA region	E/ESCWA/ENR/1995/WG.1/11
Planning in an arid environment	E/ESCWA/ENR/1995/WG.1/12
The establishment of a regional water training network in the ESCWA region	E/ESCWA/ENR/1995/WG.1/13

Water desalination in selected ESCWA countries: opportunities and constraints	E/ESCWA/ENR/1995/WG.1/14
Water resources information system: WHYCOS a basic tool for integrated water management	E/ESCWA/ENR/1995/WG.1/15
Isotope methodologies in water resources and examples of applications in the ESCWA region	E/ESCWA/ENR/1995/WG.1/16
UNESCO's response to Agenda 21 with emphasis on freshwater related issues	E/ESCWA/ENR/1995/WG.1/17
Manpower training in the field of water/wastewater	E/ESCWA/ENR/1995/WG.1/18
World Bank activities in the ESCWA region related to Agenda 21	E/ESCWA/ENR/1995/WG.1/19

Country papers

الورقة القطرية، جمهورية العراق	E/ESCWA/ENR/1995/WG.1/CP.1
الورقة القطرية، الجمهورية العربية السورية	E/ESCWA/ENR/1995/WG.1/CP.2
Towards Agenda 21 - chapter 18 Egyptian policy for implementation	E/ESCWA/ENR/1995/WG.1/CP.3
الورقة القطرية، الجمهورية اللبنانية	E/ESCWA/ENR/1995/WG.1/CP.4
National report: United Arab Emirates water resources	E/ESCWA/ENR/1995/WG.1/CP.5
The water sector in Yemen: status and outlook	E/ESCWA/ENR/1995/WG.1/CP.6
Country paper: State of Bahrain	E/ESCWA/ENR/1995/WG.1/CP.7
Country Paper: The Hashemite Kingdom of Jordan	E/ESCWA/ENR/1995/WG.1/CP.8
National report: Qatar water activities	E/ESCWA/ENR/1995/WG.1/CP.9
The formation of the Palestinian National Water Authority	E/ESCWA/ENR/1995/WG.1/CP.10

Appendix III

AGENDA

1. Opening session.
2. Election of officers.
3. Adoption of the agenda.
4. Adoption of the programme of work.
5. Presentation and discussion of the EGM documents:
   (a) Implications of Agenda 21 for integrated water management in the ESCWA region;
   (b) Methodologies for the preparation of water master plans;
   (c) Approach for the establishment of a regional water training network in the ESCWA region;
   (d) Assessment of water quality in the ESCWA region;
   (e) Groundwater quality control in the ESCWA region;
   (f) Development of water quality indices for sustainable development;
   (g) Water desalination in selected ESCWA countries: opportunities and constraints;
   (h) Application of isotope hydrology techniques in the ESCWA region;
   (i) Low-cost technique for wastewater treatment and reuse;
   (j) Remote-sensing techniques for comparative studies of watersheds in selected basins in the ESCWA region.
6. Country papers reflecting the national experiences in implementing chapters of Agenda 21 relevant to integrated water resources management.
7. Regional and international organizations' papers.
8. Recommendations of the Expert Group Meeting.
9. Adoption of the final report.

Appendix IV

PROGRAMME OF WORK

Monday, 2 October 1995

09:00 - 10:00		Registration
10:00 - 11:00		OPENING SESSION (Agenda Item 1) Opening speeches: - His Excellency Minister of Water and Irrigation of Jordan - The Executive Secretary of ESCWA - The Representative of UNEP
11:00 - 11:30		Break
11:30 - 12:00		ELECTION OF OFFICERS (Agenda Item 2) ADOPTION OF THE AGENDA AND OTHER ORGANIZATIONAL MATTERS (Agenda Items 3 and 4) PRESENTATION AND DISCUSSION OF THE EGM DOCUMENTS (Agenda Item 5)
12:00 - 12:30	(a)	Implications of Agenda 21 for integrated water management
12:30 - 13:00	(b)	Methodologies for the preparation of water master plans
13:00 - 13:30	(c)	Approach for the establishment of a regional water training network
13:30 - 14:00	(d)	Assessment of water quality in the ESCWA region
14:00 - 14:30		Break
14:30 - 15:00	(e)	Groundwater quality control in the ESCWA region
15:00 - 15:30	(f)	Development of water quality indices for sustainable development (Case Study)

Tuesday, 3 October 1995

09:00 - 09:30	(g)	Water desalination in selected ESCWA countries: opportunities and constraints
09:30 - 10:00	(h)	Application of isotope hydrology techniques in the ESCWA region
10:00 - 10:30		Break

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Tuesday, 3 October 1995 (continued)

10:30 - 11:00	(i)	Low-cost technique for wastewater treatment and reuse
11:00 - 11:30	(j)	Remote-sensing techniques for comparative studies of watersheds in selected basins in the ESCWA region
11:30 - 14:00		COUNTRY PAPERS REFLECTING THE NATIONAL EXPERIENCES IN IMPLEMENTING CHAPTERS OF AGENDA 21 RELEVANT TO INTEGRATED WATER MANAGEMENT
14:00 - 14:30		Break
14:30 - 16:30		National papers presentation (continued)

Wednesday, 4 October 1995

09:00 - 10:30	National papers presentation (continued)
10:30 - 11:00	Break
11:00 - 12:30	National papers presentation (continued)
12:30 - 14:00	REGIONAL AND INTERNATIONAL ORGANIZATIONS' PAPERS
14:00 - 14:30	Break
14:30 - 16:30	Regional and international organizations' papers (continued)

Thursday, 5 October 1995

09:00 - 10:30	PANEL DISCUSSION AND RECOMMENDATIONS OF THE EXPERT GROUP MEETING (Agenda Item 6)
10:30 - 11:00	Break
11:00 - 13:00	Tour visit to the Royal Jordanian Geographic Centre
13:00 - 16:00	ADOPTION OF THE FINAL REPORT (Agenda Item 7)